

WEST Search History

DATE: Sunday, February 05, 2006

Hide?	<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>
		<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L115	L114 and 178	3
<input type="checkbox"/>	L114	177 and (((horizontal\$2 or transvers\$4 or orthogonal\$2 or perpendicular\$2) with (vertical\$2 or longitud\$6 or parallel) with (permeability or permeabl\$3)) same ((horizontal\$2 or transvers\$4 or orthogonal\$2 or perpendicular\$2) with (vertical\$2 or longitud\$6 or parallel) with (resistiv\$5)) same (ratio))	4
<input type="checkbox"/>	L113	182 and (((horizontal\$2 or transvers\$4 or orthogonal\$2 or perpendicular\$2) with (vertical\$2 or longitud\$6 or parallel) with (permeability or permeabl\$3)) same ((horizontal\$2 or transvers\$4 or orthogonal\$2 or perpendicular\$2) with (vertical\$2 or longitud\$6 or parallel) with (resistiv\$5)) same (ratio))	3
<input type="checkbox"/>	L112	184 and (((horizontal\$2 or transvers\$4 or orthogonal\$2 or perpendicular\$2) with (vertical\$2 or longitud\$6 or parallel) with (permeability or permeabl\$3)) same ((horizontal\$2 or transvers\$4 or orthogonal\$2 or perpendicular\$2) with (vertical\$2 or longitud\$6 or parallel) with (resistiv\$5)) same (ratio))	3
<input type="checkbox"/>	L111	187 and (((horizontal\$2 or transvers\$4 or orthogonal\$2 or perpendicular\$2) with (vertical\$2 or longitud\$6 or parallel) with (permeability or permeabl\$3)) same ((horizontal\$2 or transvers\$4 or orthogonal\$2 or perpendicular\$2) with (vertical\$2 or longitud\$6 or parallel) with (resistiv\$5)) same (ratio))	3
<input type="checkbox"/>	L110	1103 and (((horizontal\$2 or transvers\$4 or orthogonal\$2 or perpendicular\$2) with (vertical\$2 or longitud\$6 or parallel) with (permeability or permeabl\$3)) same ((horizontal\$2 or transvers\$4 or orthogonal\$2 or perpendicular\$2) with (vertical\$2 or longitud\$6 or parallel) with (resistiv\$5)) same (ratio))	3
<input type="checkbox"/>	L109	1108 and ((anisotropy or anisotropic\$4) with (ratio))	3
<input type="checkbox"/>	L108	1107 and (((horizontal\$2 or transvers\$4 or parallel) with (vertical\$2 or longitud\$6 or orthogonal\$2 or perpendicular\$2) with (permeability or permeabl\$3)) same ((horizontal\$2 or transvers\$4 or parallel) with (vertical\$2 or longitud\$6 or orthogonal\$2 or perpendicular\$2) with (resistiv\$5)) same (ratio))	4
<input type="checkbox"/>	L107	1106 and ((horizontal\$2 or transvers\$4 or parallel) with (vertical\$2 or longitud\$6 or orthogonal\$2 or perpendicular\$2) with (permeability or permeabl\$3))	6
<input type="checkbox"/>	L106	1103 and ((horizontal\$2 or transvers\$4 or parallel) with (vertical\$2 or longitud\$6 or orthogonal\$2 or perpendicular\$2) with (resistiv\$5))	8
<input type="checkbox"/>	L105	1103 not 1100	1
<input type="checkbox"/>	L104	L103 and ((anisotropy or anisotropic\$4) with (ratio))	4
<input type="checkbox"/>	L103	L102 and ((determin\$4 or calculat\$4 or measur\$4) with (((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (permeability or permeabl\$3)) same ((horizontal\$2 or	15

	vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (resistiv\$5))))	
<input type="checkbox"/>	L102 (324/303-377.ccls.)	14287
<input type="checkbox"/>	L101 L100 and ((anisotropy or anisotropic\$4) with (ratio))	4
	L99 and ((determin\$4 or calculat\$4 or measur\$4) with (((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (permeability or permeabl\$3)) same ((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (resistiv\$5))))	14
<input type="checkbox"/>	L100	
<input type="checkbox"/>	L99 (324/303-367.ccls.)	13844
<input type="checkbox"/>	L98 L97 and ((anisotropy or anisotropic\$4) with (ratio))	4
	L96 and ((determin\$4 or calculat\$4 or measur\$4) with (((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (permeability or permeabl\$3)) same ((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (resistiv\$5))))	16
<input type="checkbox"/>	L97	
<input type="checkbox"/>	L96 L91 and (determin\$4 or calculat\$4 or measur\$4)	30
<input type="checkbox"/>	L95 l92 and ((anisotropy or anisotropic\$4) with (ratio))	4
<input type="checkbox"/>	L94 l92 and (anisotropy or anisotropic\$4)	10
<input type="checkbox"/>	L93 L92 and ((resistiv\$5) with (ratio) with (permeability or permeabl\$3))	2
	l91 and ((log\$4) with (formation or wellbore or "well bore" or well-bore or borehole or bore-hole or "bore hole" or earth or petrophysical\$3 or petrophysical\$3 or "petro physical\$3" or sand or clay or shale or grain))	25
<input type="checkbox"/>	L92	
<input type="checkbox"/>	L91 L87 and (((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (permeability or permeabl\$3)) same ((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (resistiv\$5)))	30
<input type="checkbox"/>	L90 L89 and ((resistiv\$5) with (permeability or permeabl\$3) with (ratio))	2
<input type="checkbox"/>	L89 L87 and ((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (ratio))	22
<input type="checkbox"/>	L88 L86 and ((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (ratio))	86
<input type="checkbox"/>	L87 L86 and ((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (permeability or permeabl\$3))	75
<input type="checkbox"/>	L86 L84 and ((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (resistiv\$5))	412
<input type="checkbox"/>	L85 L78 and ((horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2) with (resistiv\$5))	1857
<input type="checkbox"/>	L84 L83 and (permeability or permeabl\$3)	2878
<input type="checkbox"/>	L83 L82 and (resistiv\$5)	16608
<input type="checkbox"/>	L82 L78 and (horizontal\$2 or vertical\$2 or transvers\$4 or longitud\$6 or parallel or orthogonal\$2 or perpendicular\$2)	121333
<input type="checkbox"/>	L81 L80 and (permeability or permeabl\$3)	2878
<input type="checkbox"/>	L80 L79 and (resistiv\$5)	16608

<input type="checkbox"/>	L79	L78 and (horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$7 or parallel or orthogonal\$3 or perpendicular\$3)	121368
<input type="checkbox"/>	L78	L77 and (log\$4)	191116
<input type="checkbox"/>	L77	(formation or wellbore or "well bore" or well-bore or borehole or bore-hole or "bore hole" or earth or petrophysical\$3 or petro-physical\$3 or "petro physical\$3" or sand or clay or shale or grain)	3137478
<input type="checkbox"/>	L76	L75 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (resistiv\$5) with (permeability or permeabl\$3) with (ratio))	4
<input type="checkbox"/>	L75	L74 and (ratio)	41
<input type="checkbox"/>	L74	l53 and (((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (resistiv\$5)) same ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (permeability or permeabl\$3)))	69
<input type="checkbox"/>	L73	L72 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) adj4 (resistiv\$5) with (ratio))	1
<input type="checkbox"/>	L72	L71 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) adj4 (permeability or permeabl\$3) with (ratio))	2
<input type="checkbox"/>	L71	5463549	15
<input type="checkbox"/>	L70	L57 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) adj4 (permeability or permeabl\$3) with (ratio))	4
<input type="checkbox"/>	L69	L68 and (laminat\$4)	0
<input type="checkbox"/>	L68	L67 and (estima\$6 or approximat\$6)	1
<input type="checkbox"/>	L67	L66 and (coarse or fine or water or "h2O" or "h.sub.2O")	1
<input type="checkbox"/>	L66	L63 and (Waxman or Smits or Thomas or Stieber)	1
<input type="checkbox"/>	L65	L63 and (bulk or content)	0
<input type="checkbox"/>	L64	L63 and ((magnetic adj resonance) or MRI or NMR)	0
<input type="checkbox"/>	L63	L53 and (((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) adj3 (permeability or permeabl\$3)) with ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) adj3 (resistiv\$5)))	1
<input type="checkbox"/>	L62	L55 and (((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) adj3 (permeability or permeabl\$3)) with ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) adj3 (resistiv\$5)))	1
<input type="checkbox"/>	L61	L59 and (((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) adj3 (permeability or permeabl\$3)) with ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) adj3 (resistiv\$5)))	1
<input type="checkbox"/>	L60	L59 and (((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) adj2 (permeability or permeabl\$3)) with ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) adj (resistiv\$5)))	0

<input type="checkbox"/>	L59	L58 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (permeability or permeabl\$3) with (formation or wellbore or "well bore" or well-bore or borehole or bore-hole or "bore hole" or earth or petrophysical\$3 or petro-physical\$3 or "petro physical\$3" or sand or clay or shale or grain))	5
<input type="checkbox"/>	L58	L57 and (logging)	5
<input type="checkbox"/>	L57	L55 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (permeability or permeabl\$3) with (ratio))	8
<input type="checkbox"/>	L56	L55 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (resistiv\$5) with (permeability or permeabl\$3) with (ratio))	4
<input type="checkbox"/>	L55	L54 and (ratio)	36
<input type="checkbox"/>	L54	L53 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (resistiv\$5) with (permeability or permeabl\$3))	61
<input type="checkbox"/>	L53	L52 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (resistiv\$5))	957
<input type="checkbox"/>	L52	L51 and (resistiv\$5)	9014
<input type="checkbox"/>	L51	L50 and (permeability or permeabl\$3)	80606
<input type="checkbox"/>	L50	L49 and (formation or wellbore or "well bore" or well-bore or borehole or bore-hole or "bore hole" or earth or petrophysical\$3 or petro-physical\$3 or "petro physical\$3" or sand or clay or shale or grain)	1236599
<input type="checkbox"/>	L49	(horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$7 or parallel or orthogonal\$3 or perpendicular\$3)	7657216
<input type="checkbox"/>	L48	L1 and (formation or wellbore or "well bore" or well-bore or borehole or bore-hole or "bore hole" or earth or petrophysical\$3 or petro-physical\$3 or "petro physical\$3" or sand or clay or shale or grain)	706414
<input type="checkbox"/>	L47	L13 and (permeability or permeabl\$3)	6
<input type="checkbox"/>	L46	5656930 and (permeability or permeabl\$3)	16
<input type="checkbox"/>	L45	US20040140801A1	1
<input type="checkbox"/>	L44	L43 and (permeability or permeabl\$3)	5
<input type="checkbox"/>	L43	3479581	11
<input type="checkbox"/>	L42	L37 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (resistiv\$5) with (permeability or permeabl\$3) with (ratio))	5
<input type="checkbox"/>	L41	L40 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (resistiv\$5) with (permeability or permeabl\$3) with (ratio))	4
<input type="checkbox"/>	L40	L39 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (resistiv\$5) with (permeability or permeabl\$3))	36
<input type="checkbox"/>	L39	L38 and (ratio)	129
<input type="checkbox"/>	L38	L37 and (formation or wellbore or "well bore" or well-bore or borehole or bore-hole or "bore hole" or earth or petrophysical\$3 or petro-physical\$3 or	204

	"petro physical\$3" or sand or clay or shale or grain)	
<input type="checkbox"/>	L37 L36 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (resistiv\$5))	369
<input type="checkbox"/>	L36 L35 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2) with (permeability or permeabl\$3))	1760
<input type="checkbox"/>	L35 L34 and (permeability or permeabl\$3)	14755
<input type="checkbox"/>	L34 L33 and (resistiv\$5)	172809
<input type="checkbox"/>	L33 (horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$4 or parallel or perpendicular\$2 or longitudinal\$2)	7542602
<input type="checkbox"/>	L32 (horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$7 or parallel or perpendicular\$2)	7546527
	<i>DB=PGPB,USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L31 20020101235	2
	<i>DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L30 6005389 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$7 or parallel or orthogonal\$3 or perpendicular\$3) with (resistiv\$5))	4
<input type="checkbox"/>	L29 L28 not L26	3
<input type="checkbox"/>	L28 L27 and (Waxman or Smits or Thomas or Stieber)	13
<input type="checkbox"/>	L27 L22 and ((magnetic adj resonance) or MRI or NMR)	68
<input type="checkbox"/>	L26 L25 and ((magnetic adj resonance) or MRI or NMR)	10
<input type="checkbox"/>	L25 L24 and (coarse or fine)	22
<input type="checkbox"/>	L24 L23 and (Waxman or Smits or Thomas or Stieber)	33
<input type="checkbox"/>	L23 L22 and (bulk or content)	248
<input type="checkbox"/>	L22 L21 and (estima\$6 or approximat\$6)	361
<input type="checkbox"/>	L21 L20 and (induct\$5)	396
<input type="checkbox"/>	L20 L19 and (model\$4 or simulat\$6)	854
<input type="checkbox"/>	L19 L18 and (density or porosity or permeability or bvi or irreducible or bound)	2061
<input type="checkbox"/>	L18 L17 and (formation or wellbore or "well bore" or well-bore or borehole or bore-hole or "bore hole" or earth or petrophysical\$3 or petro-physical\$3 or "petro physical\$3" or sand or clay or shale or grain)	3269
<input type="checkbox"/>	L17 L16 and (water or fluid\$4 or liquid\$4 or "h20" or oil)	6129
<input type="checkbox"/>	L16 ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$7 or parallel or orthogonal\$3 or perpendicular\$3) with (resistiv\$5))	18332
<input type="checkbox"/>	L15 L14 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$7) with (resistiv\$5))	4
<input type="checkbox"/>	L14 6255819	18
<input type="checkbox"/>	L13 L12 and ((magnetic adj resonance) or MRI or NMR)	10
<input type="checkbox"/>	L12 L11 and ((horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$7) with (resistiv\$5))	12
<input type="checkbox"/>	L11 L10 and (bulk or content)	201
<input type="checkbox"/>	L10 L9 and (Waxman or Smits or Thomas or Stieber)	213

<input type="checkbox"/>	L9	L8 and (model\$4 or simulat\$6)	1507
<input type="checkbox"/>	L8	L7 and (coarse or fine)	2450
<input type="checkbox"/>	L7	L6 and (density or porosity or permeability or bvi or irreducible or bound)	5446
<input type="checkbox"/>	L6	L5 and (estima\$6 or approximat\$6)	6488
<input type="checkbox"/>	L5	L4 and (induct\$5)	8396
<input type="checkbox"/>	L4	L3 and (formation or wellbore or "well bore" or well-bore or borehole or bore-hole or "bore hole" or earth or petrophysical\$3 or petro-physical\$3 or "petro physical\$3" or sand or clay or shale or grain)	31843
<input type="checkbox"/>	L3	L2 and (water or fluid\$4 or liquid\$4 or "h20" or oil)	53313
<input type="checkbox"/>	L2	L1 and (resistiv\$5)	98763
<input type="checkbox"/>	L1	(horizontal\$3 or vertical\$3 or transvers\$5 or longitud\$7)	4326745

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☐ 1. Document ID: US 4661234 A

L42: Entry 1 of 5

File: USPT

Apr 28, 1987

US-PAT-NO: 4661234

DOCUMENT-IDENTIFIER: US 4661234 A

TITLE: Air-fuel ratio sensor and apparatus using the same

DATE-ISSUED: April 28, 1987

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Takahashi; Hideaki	Aichi			JP
Kondo; Haruyoshi	Aichi			JP
Takeuchi; Takashi	Aichi			JP
Hayakawa; Kiyoharu	Aichi			JP

US-CL-CURRENT: [204/406](#), [204/412](#), [204/425](#), [204/426](#), [338/34](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMC	Draw. D.
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☐ 2. Document ID: US 3834943 A

L42: Entry 2 of 5

File: USOC

Sep 10, 1974

US-PAT-NO: 3834943

DOCUMENT-IDENTIFIER: US 3834943 A

TITLE: ELECTROLYTE-ELECTRODE UNIT FOR SOLID-ELECTROLYTE FUEL CELL AND PROCESS FOR THE MANUFACTURE THEREOF

DATE-ISSUED: September 10, 1974

INVENTOR-NAME: TANNENBERGER H; VAN DEN BERGHE P

US-CL-CURRENT: [429/33](#), [429/41](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMC	Draw. D.
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☐ 3. Document ID: US 3479581 A

L42: Entry 3 of 5

File: USOC

Nov 18, 1969

US-PAT-NO: 3479581

DOCUMENT-IDENTIFIER: US 3479581 A

TITLE: VERTICAL RESISTIVITY LOGGING BY MEASURING THE ELECTRIC FIELD CREATED BY A TIME-VARYING MAGNETIC FIELD

DATE-ISSUED: November 18, 1969

INVENTOR-NAME: RUNGE RICHARD J

US-CL-CURRENT: 324/338; 324/366, 324/367

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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☐ 4. Document ID: US 3037105 A

L42: Entry 4 of 5

File: USOC

May 29, 1962

US-PAT-NO: 3037105

DOCUMENT-IDENTIFIER: US 3037105 A

TITLE: Methods and apparatus for the induction welding of tubing

DATE-ISSUED: May 29, 1962

INVENTOR-NAME: FRED KOHLER

US-CL-CURRENT: 219/612; 219/613

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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☐ 5. Document ID: US 2784349 A

L42: Entry 5 of 5

File: USOC

Mar 5, 1957

US-PAT-NO: 2784349

DOCUMENT-IDENTIFIER: US 2784349 A

TITLE: Electric arc welding

DATE-ISSUED: March 5, 1957

INVENTOR-NAME: ANDERSON NELSON E

US-CL-CURRENT: 315/176; 123/606, 219/130.4, 315/257

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D
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Term	Documents
PARALLEL	3379142
PARALLELS	18267
PERMEABILITY	223358
PERMEABILITIES	8924
PERMEABILITYS	4
RATIO	2374601
RATIOS	451530
HORIZONTAL\$3	0
HORIZONTAL	2107341
HORIZONTALA	32
HORIZONTALAD	1
(L37 AND ((HORIZONTAL\$3 OR VERTICAL\$3 OR TRANSVERS\$5 OR LONGITUD\$4 OR PARALLEL OR PERPENDICULAR\$2 OR LONGITUDINAL\$2) WITH (RESISTIV\$5) WITH (PERMEABILITY OR PERMEABL\$3) WITH (RATIO))) .PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	5

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Search Results - Record(s) 1 through 2 of 2 returned.

☐ 1. Document ID: US 6686736 B2

L72: Entry 1 of 2

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	FIGS	Draw D
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☐ 2. Document ID: US 5463549 A

L72: Entry 2 of 2

File: USPT

Oct 31, 1995

US-PAT-NO: 5463549DOCUMENT-IDENTIFIER: US 5463549 A

TITLE: Method and apparatus for determining permeability of subsurface formations

DATE-ISSUED: October 31, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dussan V.; Elizabeth B.	Ridgefield	CT		
Auzerais; Francois M.	Ridgefield	CT		
Anderson; Barbara I.	Brookfield Center	CT		

US-CL-CURRENT: 702/7; 324/339, 324/366, 702/12, 702/9

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	FIGS	Draw. U.
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Term	Documents
PARALLEL	3379142
PARALLELS	18267
PERMEABILITY	223358
PERMEABILITIES	8924
PERMEABILITYS	4
RATIO	2374601
RATIOS	451530
HORIZONTAL\$3	0
HORIZONTAL	2107341
HORIZONTALA	32
HORIZONTALAD	1
(L71 AND ((HORIZONTAL\$3 OR VERTICAL\$3 OR TRANSVERS\$5 OR LONGITUD\$4 OR PARALLEL OR PERPENDICULAR\$2 OR LONGITUDINAL\$2) ADJ4 (PERMEABILITY OR PERMEABL\$3) WITH (RATIO))) .PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	2

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L72: Entry 1 of 2

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

CLAIMS:

What is claimed is:

1. A method of petrophysical evaluation of a formation comprising: (a) using values of horizontal and vertical resistivities of the formation and deriving therefrom an estimate of water content thereof; (b) using NMR measurements of the formation and deriving therefrom an estimate of bulk irreducible water content of the formation; and (c) determining a parameter of interest of the formation by comparing the estimate of water content from step (a) to the estimate of bulk irreducible water content of the formation from step (b).
2. The method of claim 1 wherein deriving said estimate of water content further comprises: (i) inverting said values of horizontal and vertical resistivities of the formation using a petrophysical model to give a first estimate of fractional volume of laminated shale in the formation; (ii) obtaining measurements of density and/or neutron porosity of the formation and using a volumetric model for deriving therefrom a second estimate of fractional volume of laminated shale; and (iii) if said second estimate of fractional shale volume is greater than said first estimate of fractional shale volume, inverting said horizontal and vertical resistivities using a petrophysical model including said second estimate of fractional shale volume and obtaining therefrom a bulk water content of the formation.
3. The method of claim 1 further comprising determining a vertical and horizontal resistivity of an anisotropic sand component of the formation and determining therefrom and from at least one additional measurement selected from the group consisting of: (i) NMR measurements of the formation, and, (ii) a bulk permeability of the sand component, a parameter of interest of a coarse and a fine grain portion of the sand component.
4. The method of claim 1 further comprising using a transverse induction

logging tool for obtaining said values of horizontal and vertical resistivities of the formation.

5. The method of claim 1 further comprising using an induction logging tool for obtaining said values of horizontal resistivities and a focused current logging tool for obtaining said values of vertical resistivities.

6. The method of claim 2 wherein the petrophysical model further comprises a laminated shale component and a sand component.

7. The method of claim 2 wherein using said volumetric model further comprises using at least one of: (i) the Thomas-Stieber model, and, (ii) the Waxman-Smits model.

8. The method of claim 3 wherein said parameter of interest is selected from the group consisting of: (A) a fractional volume of said coarse grain component, (B) a fractional volume of said fine grain component, (C) a water saturation of said coarse grain component, (D) a water saturation of said fine grain component, (E) a permeability of said coarse grain component, and, (F) a permeability of said fine grain component.

9. The method of claim 3 wherein the at least one additional measurement comprises an NMR measurement, and deriving the parameter of interest further comprises deriving a distribution of relaxation times from said NMR measurements and obtaining therefrom a distribution of components of said anisotropic sand.

10. The method of claim 3 wherein the at least one additional measurement comprises a bulk permeability measurement of the anisotropic sand and deriving the parameter of interest further comprises: A. obtaining a family of possible distributions of volume fractions and bulk irreducible water content (DVI) for the coarse and fine sand components; B. determining horizontal, vertical and bulk permeability values associated with said family of possible distributions; and C. selecting from said family of possible distributions the one distribution that has a determined bulk permeability substantially equal to the measured bulk permeability.

11. The method of claim 10 wherein said bulk permeability is obtained from the group consisting of (I) NMR diffusion measurements, (II) a formation testing instrument, (III) a pressure buildup test, and, (IV) a pressure drawdown test.

12. The method of claim 10 wherein determining the horizontal and vertical permeability values associated with said family of distributions for the coarse and fine sand components further comprises using the Coates-Timur equation ##EQU21##

where k is a permeability, ϕ is a porosity, BVI is the bound volume irreducible, and a , b , and C are fitting parameters.

13. The method of claim 10 wherein determining horizontal, vertical and bulk permeability values further comprises using a relationship of the form

$$k = C \phi^{.a} T^{.b}$$

where k is a permeability, ϕ is a porosity and T is a NMR relaxation time, and a , b , and C are fitting parameters.

14. The method of claim 13 wherein T is a longitudinal NMR relaxation time.
15. The method of claim 2 wherein the petrophysical model in (i) comprises at least one of (A) an isotropic sand component, and, (B) an anisotropic sand component.
16. The method of claim 10 wherein the coarse sand portion of the selected distribution is characterized by an irreducible water saturation less than an irreducible water saturation of the fine grain sand portion of the selected distribution.
17. The method of claim 1 wherein deriving the parameter of interest further comprises specifying a formation factor for a constituent of the formation.
18. The method of claim 10 wherein the determined bulk permeability is a spherical permeability related to the horizontal and vertical permeability values by a relationship of the form ##EQU22##
19. The method of claim 12 further comprising specifying the parameters a, b and C.
20. The method of claim 13 further comprising specifying the parameters a, b, and C.
21. A method of petrophysical evaluation of a formation comprising: (a) inverting values of horizontal and vertical resistivities of the formation using a petrophysical model and obtaining an estimate of water content of said formation; (b) using NMR measurements of the formation and deriving therefrom an estimate of bulk irreducible water content of the formation; and (c) determining from said bulk irreducible water content and said water content obtained in (a), a permeability of the formation.
22. The method of claim 21 wherein obtaining said estimate of water content further comprises determining a vertical and horizontal resistivity of an anisotropic sand component of the formation, and determining therefrom and from at least one additional measurement selected from the group consisting of: (i) NMR measurements of the formation, and, (ii) a bulk permeability of the sand component, a parameter of interest of a coarse and a fine grain portion of the sand component.
23. The method of claim 22 wherein said parameter of interest is selected from the group consisting of: (A) a fractional volume of said coarse grain component, (B) a fractional volume of said fine grain component, (C) a water saturation of said coarse grain component, (I)) a water saturation of said fine grain component.
24. The method of claim 22 wherein the at least one additional measurement comprises an NMR measurement, and deriving the parameter of interest further comprises deriving a distribution of relaxation times from said NMR measurements and obtaining therefrom a distribution of components of said anisotropic sand.
25. The method of claim 22 wherein the at least one additional measurement comprises a bulk permeability measurement of the anisotropic sand and deriving the parameter of interest further comprises: A. obtaining a family of possible distributions of volume fractions and bulk irreducible water content (BVI) for

the coarse and fine sand components; B. determining horizontal, vertical and bulk permeability values associated with said family of possible distributions; and C. selecting from said family of possible distributions the one distribution that has a determined bulk permeability substantially equal to the measured bulk permeability.

26. The method of claim 25 wherein said bulk permeability is obtained from the group consisting of (I) NMR diffusion measurements, (II) a formation testing instrument, (III) a pressure buildup test, and, (IV) a pressure drawdown test.

27. The method of claim 26 wherein determining the horizontal and vertical permeability values associated with said family of distributions for the coarse and fine sand components further comprises using the Coates-Timur equation ##EQU23##

where k is a permeability, ϕ is a porosity, BVI is the bound volume irreducible, and a , b , and C are fitting parameters.

28. The method of claim 26 wherein determining horizontal, vertical and bulk permeability values further comprises using a relationship of the form

$$k = C \phi^{.sup.a} T^{.sup.b}$$

where k is a permeability, ϕ is a porosity and T is a NMR relaxation time, and a , b , and C are fitting parameters.

29. The method of claim 28 wherein T is a longitudinal NMR relaxation time.

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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs
Generate OACS				

Search Results - Record(s) 1 through 1 of 1 returned.

☐ 1. Document ID: US 6686736 B2

L73: Entry 1 of 1

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	NMC	Class. Cl.
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
PARALLEL	3379142
PARALLELS	18267
RATIO	2374601
RATIOS	451530
HORIZONTAL\$3	0
HORIZONTAL	2107341
HORIZONTALA	32
HORIZONTALAD	1

HORIZONTALAEB	1
HORIZONTALAI	2
HORIZONTALAIR	2
(L72 AND ((HORIZONTAL\$3 OR VERTICAL\$3 OR TRANSVERS\$5 OR LONGITUD\$4 OR PARALLEL OR PERPENDICULAR\$2 OR LONGITUDINAL\$2) ADJ4 (RESIST\$5) WITH (RATIO))) .PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	1

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Search Results - Record(s) 1 through 4 of 4 returned.

☐ 1. Document ID: US 4661234 A

L76: Entry 1 of 4

File: USPT

Apr 28, 1987

US-PAT-NO: 4661234

DOCUMENT-IDENTIFIER: US 4661234 A

TITLE: Air-fuel ratio sensor and apparatus using the same

DATE-ISSUED: April 28, 1987

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Takahashi; Hideaki	Aichi			JP
Kondo; Haruyoshi	Aichi			JP
Takeuchi; Takashi	Aichi			JP
Hayakawa; Kiyoharu	Aichi			JP

US-CL-CURRENT: 204/406; 204/412, 204/425, 204/426, 338/34

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KINC	Draw D
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☐ 2. Document ID: US 3834943 A

L76: Entry 2 of 4

File: USOC

Sep 10, 1974

US-PAT-NO: 3834943

DOCUMENT-IDENTIFIER: US 3834943 A

TITLE: ELECTROLYTE-ELECTRODE UNIT FOR SOLID-ELECTROLYTE FUEL CELL AND PROCESS FOR THE MANUFACTURE THEREOF

DATE-ISSUED: September 10, 1974

INVENTOR-NAME: TANNENBERGER H; VAN DEN BERGHE P

US-CL-CURRENT: 429/33, 429/41

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KINC	Draw D
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☐ 3. Document ID: US 3479581 A

L76: Entry 3 of 4

File: USOC

Nov 18, 1969

US-PAT-NO: 3479581

DOCUMENT-IDENTIFIER: US 3479581 A

TITLE: VERTICAL RESISTIVITY LOGGING BY MEASURING THE ELECTRIC FIELD CREATED BY A TIME-VARYING MAGNETIC FIELD

DATE-ISSUED: November 18, 1969

INVENTOR-NAME: RUNGE RICHARD J

US-CL-CURRENT: 324/338; 324/366, 324/367

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Notes	Drawings
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☐ 4. Document ID: US 2784349 A

L76: Entry 4 of 4

File: USOC

Mar 5, 1957

US-PAT-NO: 2784349

DOCUMENT-IDENTIFIER: US 2784349 A

TITLE: Electric arc welding

DATE-ISSUED: March 5, 1957

INVENTOR-NAME: ANDERSON NELSON E

US-CL-CURRENT: 315/176; 123/606, 219/130.4, 315/257

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Notes	Drawings
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
PARALLEL	3379142
PARALLELS	18267
PERMEABILITY	223358
PERMEABILITIES	8924
PERMEABILITYS	4
RATIO	2374601
RATIOS	451530
HORIZONTAL\$3	0
HORIZONTAL	2107341
HORIZONTALA	32

HORIZONTALAD	1
(L75 AND ((HORIZONTAL\$3 OR VERTICAL\$3 OR TRANSVERS\$5 OR LONGITUD\$4 OR PARALLEL OR PERPENDICULAR\$2 OR LONGITUDINAL\$2) WITH (RESISTIV\$5) WITH (PERMEABILITY OR PERMEABL\$3) WITH (RATIO))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	4

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Search Results - Record(s) 1 through 3 of 3 returned.

☐ 1. Document ID: US 5963117 A

L77: Entry 1 of 3

File: USPT

Oct 5, 1999

US-PAT-NO: 5963117

DOCUMENT-IDENTIFIER: US 5963117 A

TITLE: Opposed magnet-type magnetic circuit assembly with permanent magnets

DATE-ISSUED: October 5, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ohashi; Ken	Fukui-ken			JP
Yoneda; Yuhito	Fukui-ken			JP
Miyata; Koji	Fukui-ken			JP
Inoue; Yuji	Tokyo			JP

*Avuds Satvach**N/A*US-CL-CURRENT: 335/306; 324/319, 335/296, 335/297

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWD	Draw Ds
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☐ 2. Document ID: US 5864275 A

L77: Entry 2 of 3

File: USPT

Jan 26, 1999

US-PAT-NO: 5864275

DOCUMENT-IDENTIFIER: US 5864275 A

TITLE: Opposed magnet-type magnetic circuit assembly with permanent magnets

DATE-ISSUED: January 26, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ohashi; Ken	Fukui-ken			JP
Yoneda; Yuhito	Fukui-ken			JP
Miyata; Koji	Fukui-ken			JP
Inoue; Yuji	Tokyo			JP

*Avuds Satvach N/A*US-CL-CURRENT: 335/306; 324/319, 335/296, 335/297, 335/298

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMC	Drawings
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☐ 3. Document ID: US 3123747 A

L77: Entry 3 of 3

File: USOC

Mar 3, 1964

US-PAT-NO: 3123747

DOCUMENT-IDENTIFIER: US 3123747 A

TITLE: OCR SCANNED DOCUMENT

DATE-ISSUED: March 3, 1964

INVENTOR-NAME: Name not available

US-CL-CURRENT: 335/210; 310/65, 335/297, 336/234, 336/60, D06/429

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KMC	Drawings
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Term	Documents
TOTAL\$2	0
TOTAL	2157319
TOTALA	21
TOTALAC	1
TOTALAL	1
TOTALAN	3
TOTALAP	1
TOTALAT	3
TOTALAV	1
TOTALAY	2
TOTALB	5
(L71 AND ((TOTAL\$2 OR COMPLET\$3 OR FULL\$2 OR ENTIRE\$2) WITH (SATURAT\$4))) .PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	3

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Search Results - Record(s) 1 through 2 of 2 returned.

☐ 1. Document ID: US 6603313 B1

L90: Entry 1 of 2

File: USPT

Aug 5, 2003

US-PAT-NO: 6603313

DOCUMENT-IDENTIFIER: US 6603313 B1

TITLE: Remote reservoir resistivity mapping

DATE-ISSUED: August 5, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Srnka; Leonard J.	Houston	TX		

US-CL-CURRENT: 324/354; 324/359, 702/5

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw. D.
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☐ 2. Document ID: US 3479581 A

L90: Entry 2 of 2

File: USOC

Nov 18, 1969

US-PAT-NO: 3479581

DOCUMENT-IDENTIFIER: US 3479581 A

TITLE: VERTICAL RESISTIVITY LOGGING BY MEASURING THE ELECTRIC FIELD CREATED BY A TIME-VARYING MAGNETIC FIELD

DATE-ISSUED: November 18, 1969

INVENTOR-NAME: RUNGE RICHARD J

US-CL-CURRENT: 324/338; 324/366, 324/367

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw. D.
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Term	Documents
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PERMEABILITY	223358
PERMEABILITIES	8924
PERMEABILITYS	4
RATIO	2374601
RATIOS	451530
RESISTIV\$5	0
RESISTIV	752
RESISTIVA	8
RESISTIVANCE	1
RESISTIVAY	1
RESISTIVA5	1
(L89 AND ((RESISTIV\$5) WITH (PERMEABILITY OR PERMEABL\$3) WITH (RATIO))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	2

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Search Results - Record(s) 1 through 2 of 2 returned.

☐ 1. Document ID: US 6603313 B1

L93: Entry 1 of 2

File: USPT

Aug 5, 2003

US-PAT-NO: 6603313

DOCUMENT-IDENTIFIER: US 6603313 B1

TITLE: Remote reservoir resistivity mapping

DATE-ISSUED: August 5, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Srnka; Leonard J.	Houston	TX		

US-CL-CURRENT: 324/354; 324/359, 702/5

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Drawings
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☐ 2. Document ID: US 3479581 A

L93: Entry 2 of 2

File: USOC

Nov 18, 1969

US-PAT-NO: 3479581

DOCUMENT-IDENTIFIER: US 3479581 A

TITLE: VERTICAL RESISTIVITY LOGGING BY MEASURING THE ELECTRIC FIELD CREATED BY A TIME-VARYING MAGNETIC FIELD

DATE-ISSUED: November 18, 1969

INVENTOR-NAME: RUNGE RICHARD J

US-CL-CURRENT: 324/338; 324/366, 324/367

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Drawings
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Term	Documents
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RATIO	2374601
RATIOS	451530
PERMEABILITY	223358
PERMEABILITIES	8924
PERMEABILITYS	4
RESISTIV\$5	0
RESISTIV	752
RESISTIVA	8
RESISTIVANCE	1
RESISTIVAY	1
RESISTIVA5	1
(L92 AND ((RESISTIV\$5) WITH (RATIO) WITH (PERMEABILITY OR PERMEABL\$3))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	2

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Search Results - Record(s) 1 through 4 of 4 returned.

☐ 1. Document ID: US 20040140801 A1

L95: Entry 1 of 4

File: PGPB

Jul 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040140801

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040140801 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: July 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NMR	Draw G.
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☐ 2. Document ID: US 20020101235 A1

L95: Entry 2 of 4

File: PGPB

Aug 1, 2002

PGPUB-DOCUMENT-NUMBER: 20020101235

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020101235 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D.
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☐ 3. Document ID: US 6686736 B2

L95: Entry 3 of 4

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D.
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☐ 4. Document ID: US 2786178 A

L95: Entry 4 of 4

File: USOC

Mar 19, 1957

US-PAT-NO: 2786178

DOCUMENT-IDENTIFIER: US 2786178 A

TITLE: Apparatus for electrical well logging

DATE-ISSUED: March 19, 1957

INVENTOR-NAME: HENRI-GEORGES DOLL

US-CL-CURRENT: 324/367

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KWIC	Draw D.
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Term	Documents
ANISOTROPY	55853
ANISOTROPIES	1512

ANISOTROPYS	14
RATIO	2374601
RATIOS	451530
ANISOTROPIC\$4	0
ANISOTROPIC	103124
ANISOTROPICAFLY	2
ANISOTROPICAHY	1
ANISOTROPICAIY	1
ANISOTROPICAILY	7
(L92 AND ((ANISOTROPY OR ANISOTROPIC\$4) WITH (RATIO))) .PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	4

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Search Results - Record(s) 1 through 4 of 4 returned.

☐ 1. Document ID: US 20040140801 A1

L98: Entry 1 of 4

File: PGPB

Jul 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040140801

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040140801 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: July 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	FIGS	Drawings
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☐ 2. Document ID: US 20020101235 A1

L98: Entry 2 of 4

File: PGPB

Aug 1, 2002

PGPUB-DOCUMENT-NUMBER: 20020101235

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020101235 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NMC	Draw D.
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☐ 3. Document ID: US 6686736 B2

L98: Entry 3 of 4

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NMC	Draw D.
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☐ 4. Document ID: US 2786178 A

L98: Entry 4 of 4

File: USOC

Mar 19, 1957

US-PAT-NO: 2786178

DOCUMENT-IDENTIFIER: US 2786178 A

TITLE: Apparatus for electrical well logging

DATE-ISSUED: March 19, 1957

INVENTOR-NAME: HENRI-GEORGES DOLL

US-CL-CURRENT: 324/367

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NMC	Draw D.
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Term	Documents
ANISOTROPY	55853
ANISOTROPIES	1512

ANISOTROPYS	14
RATIO	2374601
RATIOS	451530
ANISOTROPIC\$4	0
ANISOTROPIC	103124
ANISOTROPICAFLY	2
ANISOTROPICAHY	1
ANISOTROPICAIY	1
ANISOTROPICAILY	7
(L97 AND ((ANISOTROPY OR ANISOTROPIC\$4) WITH (RATIO))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	4

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Search Results - Record(s) 1 through 14 of 14 returned.

☐ 1. Document ID: US 20040140801 A1

L100: Entry 1 of 14

File: PGPB

Jul 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040140801

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040140801 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: July 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	MMC	Draw D.
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☐ 2. Document ID: US 20020101235 A1

L100: Entry 2 of 14

File: PGPB

Aug 1, 2002

PGPUB-DOCUMENT-NUMBER: 20020101235

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020101235 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
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☐ 3. Document ID: US 6686736 B2

L100: Entry 3 of 14

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw D
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☐ 4. Document ID: US 6060886 A

L100: Entry 4 of 14

File: USPT

May 9, 2000

US-PAT-NO: 6060886

DOCUMENT-IDENTIFIER: US 6060886 A

TITLE: Radial sounding electrical well logging instrument

DATE-ISSUED: May 9, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tabarovsky; Leonty A.	Houston	TX		
Fabris; Antonio	Houston	TX		
Mezzatesta; Alberto G.	Houston	TX		
Itskovich; Gregory B.	Houston	TX		

US-CL-CURRENT: 324/373; 324/366

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw D
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☐ 5. Document ID: US 5463549 A

L100: Entry 5 of 14

File: USPT

Oct 31, 1995

US-PAT-NO: 5463549

DOCUMENT-IDENTIFIER: US 5463549 A

TITLE: Method and apparatus for determining permeability of subsurface formations

DATE-ISSUED: October 31, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dussan V.; Elizabeth B.	Ridgefield	CT		
Auzerais; Francois M.	Ridgefield	CT		
Anderson; Barbara I.	Brookfield Center	CT		

US-CL-CURRENT: 702/7; 324/339, 324/366, 702/12, 702/9

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw D
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☐ 6. Document ID: US 4748415 A

L100: Entry 6 of 14

File: USPT

May 31, 1988

US-PAT-NO: 4748415

DOCUMENT-IDENTIFIER: US 4748415 A

TITLE: Methods and apparatus for induction logging in cased boreholes

DATE-ISSUED: May 31, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vail, III; William B.	Bothell	WA		

US-CL-CURRENT: 324/339; 324/346, 324/369

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw D
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☐ 7. Document ID: US 3479581 A

L100: Entry 7 of 14

File: USOC

Nov 18, 1969

US-PAT-NO: 3479581

DOCUMENT-IDENTIFIER: US 3479581 A

TITLE: VERTICAL RESISTIVITY LOGGING BY MEASURING THE ELECTRIC FIELD CREATED BY A TIME-VARYING MAGNETIC FIELD

DATE-ISSUED: November 18, 1969

INVENTOR-NAME: RUNGE RICHARD J

US-CL-CURRENT: 324/338; 324/366, 324/367

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NUM	Draw D
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☐ 8. Document ID: US 2973811 A

L100: Entry 8 of 14

File: USOC

Mar 7, 1961

US-PAT-NO: 2973811

DOCUMENT-IDENTIFIER: US 2973811 A

TITLE: Process for detecting underground water

DATE-ISSUED: March 7, 1961

INVENTOR-NAME: ROGERS ALLEN S

US-CL-CURRENT: 166/250.15; 166/254.1, 299/5, 324/323, 324/363

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NUM	Draw D
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☐ 9. Document ID: US 2852734 A

L100: Entry 9 of 14

File: USOC

Sep 16, 1958

US-PAT-NO: 2852734

DOCUMENT-IDENTIFIER: US 2852734 A

TITLE: Groundwater direction determination

DATE-ISSUED: September 16, 1958

INVENTOR-NAME: JOSENDAL VIRGIL A; STEGEMEIER RICHARD J

US-CL-CURRENT: 324/325, 166/250.01, 324/347

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NUM	Draw D
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☐ 10. Document ID: US 2786178 A

L100: Entry 10 of 14

File: USOC

Mar 19, 1957

US-PAT-NO: 2786178

DOCUMENT-IDENTIFIER: US 2786178 A

TITLE: Apparatus for electrical well logging

DATE-ISSUED: March 19, 1957

INVENTOR-NAME: HENRI-GEORGES DOLL

US-CL-CURRENT: 324/367

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	IMC	Draw D
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☐ 11. Document ID: US 2712626 A

L100: Entry 11 of 14

File: USOC

Jul 5, 1955

US-PAT-NO: 2712626

DOCUMENT-IDENTIFIER: US 2712626 A

TITLE: Selective spontaneous potential well logging method and apparatus

DATE-ISSUED: July 5, 1955

INVENTOR-NAME: HENRI-GEORGES DOLL

US-CL-CURRENT: 324/351

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	IMC	Draw D
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☐ 12. Document ID: US 2592125 A

L100: Entry 12 of 14

File: USOC

Apr 8, 1952

US-PAT-NO: 2592125

DOCUMENT-IDENTIFIER: US 2592125 A

TITLE: Method and apparatus for logging static spontaneous potentials in wells

DATE-ISSUED: April 8, 1952

INVENTOR-NAME: HENRI-GEORGES DOLL

US-CL-CURRENT: 324/351; 324/123R, 324/140R, 324/149

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	IMC	Draw D
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☐ 13. Document ID: US 2345608 A

L100: Entry 13 of 14

File: USOC

Apr 4, 1944

US-PAT-NO: 2345608

DOCUMENT-IDENTIFIER: US 2345608 A

TITLE: Geophysical prospecting

DATE-ISSUED: April 4, 1944

INVENTOR-NAME: LEE FREDERICK W

US-CL-CURRENT: 324/358

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	AMC	Draw D
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☐ 14. Document ID: US 2300206 A

L100: Entry 14 of 14

File: USOC

Oct 27, 1942

US-PAT-NO: 2300206

DOCUMENT-IDENTIFIER: US 2300206 A

TITLE: Testing well

DATE-ISSUED: October 27, 1942

INVENTOR-NAME: CLARK JOSEPH B

US-CL-CURRENT: 324/325; 73/152.18

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	AMC	Draw D
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
PARALLEL	3379142
PARALLELS	18267
PERMEABILITY	223358
PERMEABILITIES	8924
PERMEABILITYS	4
DETERMIN\$4	0
DETERMIN	14292
DETERMINA	2369
DETERMINAA	1
DETERMINAALE	2
DETERMINAAON	1
(L99 AND ((DETERMIN\$4 OR CALCULAT\$4 OR MEASUR\$4) WITH (((HORIZONTAL\$2 OR VERTICAL\$2 OR TRANSVERS\$4 OR LONGITUD\$6 OR PARALLEL OR ORTHOGONAL\$2 OR PERPENDICULAR\$2) WITH (PERMEABILITY OR PERMEABL\$3)) SAME ((HORIZONTAL\$2 OR VERTICAL\$2 OR TRANSVERS\$4 OR LONGITUD\$6 OR PARALLEL OR ORTHOGONAL\$2 OR PERPENDICULAR\$2) WITH	14

(RESISTIV\$5)))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.

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Search Results - Record(s) 1 through 4 of 4 returned.

☐ 1. Document ID: US 20040140801 A1

L101: Entry 1 of 4

File: PGPB

Jul 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040140801

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040140801 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: July 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NMR	Drawings
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☐ 2. Document ID: US 20020101235 A1

L101: Entry 2 of 4

File: PGPB

Aug 1, 2002

PGPUB-DOCUMENT-NUMBER: 20020101235

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020101235 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NMC	Draw. D.
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☐ 3. Document ID: US 6686736 B2

L101: Entry 3 of 4

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from
nuclear, NMR and resistivity measurements

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NMC	Draw. D.
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☐ 4. Document ID: US 2786178 A

L101: Entry 4 of 4

File: USOC

Mar 19, 1957

US-PAT-NO: 2786178

DOCUMENT-IDENTIFIER: US 2786178 A

TITLE: Apparatus for electrical well logging

DATE-ISSUED: March 19, 1957

INVENTOR-NAME: HENRI-GEORGES DOLL

US-CL-CURRENT: 324/367

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NMC	Draw. D.
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
ANISOTROPY	55853
ANISOTROPIES	1512

ANISOTROPYS	14
RATIO	2374601
RATIOS	451530
ANISOTROPIC\$4	0
ANISOTROPIC	103124
ANISOTROPICAFLY	2
ANISOTROPICAHY	1
ANISOTROPICAIYY	1
ANISOTROPICAILY	7
(L100 AND ((ANISOTROPY OR ANISOTROPIC\$4) WITH (RATIO))).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	4

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☐ 1. Document ID: US 20050104596 A1

L105: Entry 1 of 1

File: PGPB

May 19, 2005

PGPUB-DOCUMENT-NUMBER: 20050104596

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050104596 A1

TITLE: Method and device for measuring the resistivity anisotropy of layered rock samples

PUBLICATION-DATE: May 19, 2005

INVENTOR-INFORMATION:

NAME

CITY

STATE

COUNTRY

Fleury, Marc

La Celle Saint Cloud

FR

US-CL-CURRENT: 324/376

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	WIC	Draw D.
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Term	Documents
(103 NOT 100) . PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD.	1
(L103 NOT L100) . PGPB, USPT, USOC, EPAB, JPAB, DWPI, TDBD.	1

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Search Results - Record(s) 1 through 4 of 4 returned.

☐ 1. Document ID: US 20040140801 A1

L108: Entry 1 of 4

File: PGPB

Jul 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040140801

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040140801 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: July 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: [324/303](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	INM	Draw. D.
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☐ 2. Document ID: US 20020101235 A1

L108: Entry 2 of 4

File: PGPB

Aug 1, 2002

PGPUB-DOCUMENT-NUMBER: 20020101235

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020101235 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	IMC	Draw D.
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☐ 3. Document ID: US 6686736 B2

L108: Entry 3 of 4

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	IMC	Draw D.
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☐ 4. Document ID: US 3479581 A

L108: Entry 4 of 4

File: USOC

Nov 18, 1969

US-PAT-NO: 3479581

DOCUMENT-IDENTIFIER: US 3479581 A

TITLE: VERTICAL RESISTIVITY LOGGING BY MEASURING THE ELECTRIC FIELD CREATED BY A TIME-VARYING MAGNETIC FIELD

DATE-ISSUED: November 18, 1969

INVENTOR-NAME: RUNGE RICHARD J

US-CL-CURRENT: 324/338; 324/366, 324/367

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	IMC	Draw D.
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Term	Documents
PARALLEL	3379142

PARALLELS	18267
PERMEABILITY	223358
PERMEABILITIES	8924
PERMEABILITYS	4
RATIO	2374601
RATIOS	451530
HORIZONTAL\$2	0
HORIZONTAL	2107341
HORIZONTALA	32
HORIZONTALAD	1
(L107 AND ((HORIZONTAL\$2 OR TRANSVERS\$4 OR PARALLEL) WITH (VERTICAL\$2 OR LONGITUD\$6 OR ORTHOGONAL\$2 OR PERPENDICULAR\$2) WITH (PERMEABILITY OR PERMEABL\$3)) SAME ((HORIZONTAL\$2 OR TRANSVERS\$4 OR PARALLEL) WITH (VERTICAL\$2 OR LONGITUD\$6 OR ORTHOGONAL\$2 OR PERPENDICULAR\$2) WITH (RESISTIV\$5)) SAME (RATIO))) .PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	4

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☐ 1. Document ID: US 20040140801 A1

L109: Entry 1 of 3

File: PGPB

Jul 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040140801

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040140801 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: July 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: [324/303](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	PMC	Drawings
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☐ 2. Document ID: US 20020101235 A1

L109: Entry 2 of 3

File: PGPB

Aug 1, 2002

PGPUB-DOCUMENT-NUMBER: 20020101235

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020101235 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	PMC	Draw D
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☐ 3. Document ID: US 6686736 B2

L109: Entry 3 of 3

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	PMC	Draw D
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
ANISOTROPY	55853
ANISOTROPIES	1512
ANISOTROPYS	14
RATIO	2374601
RATIOS	451530
ANISOTROPIC\$4	0
ANISOTROPIC	103124
ANISOTROPICAFLY	2
ANISOTROPICAHY	1
ANISOTROPICAIYY	1
ANISOTROPICAILY	7
(L108 AND ((ANISOTROPY OR ANISOTROPIC\$4) WITH (RATIO))) .PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	3

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Search Results - Record(s) 1 through 3 of 3 returned.

☐ 1. Document ID: US 20040140801 A1

L110: Entry 1 of 3

File: PGPB

Jul 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040140801

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040140801 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: July 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: [324/303](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	IMC	Draw D
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☐ 2. Document ID: US 20020101235 A1

L110: Entry 2 of 3

File: PGPB

Aug 1, 2002

PGPUB-DOCUMENT-NUMBER: 20020101235

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020101235 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NMC	Draw D
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☐ 3. Document ID: US 6686736 B2

L110: Entry 3 of 3

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NMC	Draw D
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
PARALLEL	3379142
PARALLELS	18267
PERMEABILITY	223358
PERMEABILITIES	8924
PERMEABILITYS	4
RATIO	2374601
RATIOS	451530
HORIZONTAL\$2	0
HORIZONTAL	2107341
HORIZONTALA	32
HORIZONTALAD	1
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((HORIZONTAL\$2 OR TRANSVERS\$4 OR ORTHOGONAL\$2 OR PERPENDICULAR\$2) WITH (VERTICAL\$2 OR LONGITUD\$6 OR PARALLEL) WITH (RESISTIV\$5)) SAME (RATIO))) .PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	3
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☐ 1. Document ID: US 20040140801 A1

L113: Entry 1 of 3

File: PGPB

Jul 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040140801

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040140801 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: July 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: [324/303](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NMR	Drawings
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☐ 2. Document ID: US 20020101235 A1

L113: Entry 2 of 3

File: PGPB

Aug 1, 2002

PGPUB-DOCUMENT-NUMBER: 20020101235

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020101235 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NMC	Draw. O.
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☐ 3. Document ID: US 6686736 B2

L113: Entry 3 of 3

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NMC	Draw. O.
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
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RATIO	2374601
RATIOS	451530
HORIZONTAL\$2	0
HORIZONTAL	2107341
HORIZONTALA	32
HORIZONTALAD	1
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((HORIZONTAL\$2 OR TRANSVERS\$4 OR ORTHOGONAL\$2 OR PERPENDICULAR\$2) WITH (VERTICAL\$2 OR LONGITUD\$6 OR PARALLEL) WITH (RESISTIV\$5)) SAME (RATIO))) .PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	3
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☐ 1. Document ID: US 20040140801 A1

L114: Entry 1 of 4

File: PGPB

Jul 22, 2004

PGPUB-DOCUMENT-NUMBER: 20040140801

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040140801 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: July 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: [324/303](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NMR	Draw D
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☐ 2. Document ID: US 20020101235 A1

L114: Entry 2 of 4

File: PGPB

Aug 1, 2002

PGPUB-DOCUMENT-NUMBER: 20020101235

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020101235 A1

TITLE: Combined characterization and inversion of reservoir parameters from nuclear, NMR and resistivity measurements

PUBLICATION-DATE: August 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Schoen, Juergen S.	Leoben	TX	AT
Fanini, Otto N.	Houston	TX	US
Georgi, Daniel	Houston		US

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NMC	Draw D.
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☐ 3. Document ID: US 6686736 B2

L114: Entry 3 of 4

File: USPT

Feb 3, 2004

US-PAT-NO: 6686736

DOCUMENT-IDENTIFIER: US 6686736 B2

TITLE: Combined characterization and inversion of reservoir parameters from
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DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schoen; Juergen S.	Leoben			AT
Fanini; Otto N.	Houston	TX		
Georgi; Daniel	Houston	TX		

US-CL-CURRENT: 324/303

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NMC	Draw D.
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☐ 4. Document ID: US 3567808 A

L114: Entry 4 of 4

File: USOC

Mar 2, 1971

US-PAT-NO: 3567808

DOCUMENT-IDENTIFIER: US 3567808 A

TITLE: PRODUCTION OF LOW DENSITY-HIGH STRENGTH CARBON

DATE-ISSUED: March 2, 1971

INVENTOR-NAME: SMITH MARK J

US-CL-CURRENT: 264/29.7; 423/448

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	NMC	Draw D.
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Term	Documents
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RATIOS	451530
HORIZONTAL\$2	0
HORIZONTAL	2107341
HORIZONTALA	32
HORIZONTALAD	1
(L77 AND ((HORIZONTAL\$2 OR TRANSVERS\$4 OR ORTHOGONAL\$2 OR PERPENDICULAR\$2) WITH (VERTICAL\$2 OR LONGITUD\$6 OR PARALLEL) WITH (PERMEABILITY OR PERMEABL\$3)) SAME ((HORIZONTAL\$2 OR TRANSVERS\$4 OR ORTHOGONAL\$2 OR PERPENDICULAR\$2) WITH (VERTICAL\$2 OR LONGITUD\$6 OR PARALLEL) WITH (RESISTIV\$5)) SAME (RATIO))) .PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	4

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L114: Entry 4 of 4

File: USOC

Mar 2, 1971

DOCUMENT-IDENTIFIER: US 3567808 A

TITLE: PRODUCTION OF LOW DENSITY-HIGH STRENGTH CARBON

OCR Scanned Text (2):

3 heated. The char in its "as baked" condition had a laMiDar structure and a density of ca. 0.25 g./CM.3. The cooled char was reduced to the appropriate particle dimensions for formulatin.- the porous materials by pulverizing in a bammermir and separating by standard screens on a "Rotap" shaker. 70 parts of the 65/200 size particles were blended with 30 parts of a medium No. 30 coal tar pitch for a 5 minute period in a twin- shell[iblender and the resultant blend was mixed in a sigma-blade mixer for 30 minutes. The resultant mixture was crushed in a jaw cr-usher to pass a standard 40-mesh screen. The resulting powder was fabricated into blocks measuring 11/2 in. x 41/2 in. x 6 in. and 3 in. x 33/4 in. x 43/4 in. on a heated platen, molding press usin.- a molding pressure of 3-4 ton/in.2. The molded blocks were packed in a carbonized-sand mixture within silicon carbide sa- - ers and baked in a muffle furnace to 900' C. at 6' C./hr. R.T. to 600' C., 12' C./hr.-600' C. to 900' C., and soaked at 900o C. for 1 hour. At this heatin@ rate the block can be brought up to 900' C. rapidly without cracking due to thermal stress. Slower heating rates can be employed, however this would require excessive furnace time. The optimum heating rate is that which will brin-, the body to teniperature without crackin.- while using the minimum furnace time. The molded blocks had a density of 1.11 g./cc. when green and 1.09 -./cc. wheii baked. The blocks had good dimensional stability and showed sli.@ht shrinkage and had a flexural stren-th of 3700 p.s.i. and a compressive stren,@h of 16,000 p.s.i. The electrical resistivity of the blocks was 581.0 ohiii-in.XJ04 and C.T.E. (coefficient of thermal expansion) of 3.03 X I 0-6 in./in. /' C. parallel and 3.24 perpendicular, and -,t thermal conductivity of 0.0021 cgs. units. Porosity tests of the blocks showed none greater than 100,u; 0.172 cc./g. 100tkIO.06g and 0.231 cc./g. less than 0.06g or a total of 0.403 cc./g. when baked. The porosity indicates that a large proportion of the pores are of the closed or inaccessible type, thereby inhibiting the access of air or other gases into the interior of the body. This type of pore structure produces a more oxidatively stable carbon body because oxidation will only occur on the surface rather than throughout the body. Selected specimeris of the baked products were -raphitized by fur-ther heat treatment to 2750' C. in an induction furnace operated by means of a 40 l@-Howatt, sparkgap induction generator. Graphitizing was performed with a 100' C./hr. heating rate from 900' C. to 2750' C. The rate of heatin- to the graphitization temperature is selected to provide for rapid heating of the block without cracking due to thermal stress while at the same time using a minimum of fi-irnace time. The - raphitized blocks had an apparent density of 1.17 to 1.22 @./cc., He density of 1.61 g./ce., electrical resistivity of 19.97-22.1 ohm in. X 104, flexure strength of 3034-3245 p.s.i., and compressive strength of 8286-8782, p.s.i.; permeability of 1.46 CM.2 per second; C.T.E. of 4.0JXIO-6 parallel and 3.72XI6-6 perpendicular, and had a thermal conductivity of 0.019 cgs. units. X-raY properties were interlayer space: 3.3807- 3.3880; crystalline size: 1 15-21 1; pref. orient. 20. Porosity of the graphitized blocks showed 0.008 cc./g. greater than IOOA; 0.220 cc./g. 100IL10.06A; and 0.186 cc./,-. less than 0.06,u, or a total of 0.414 cc./-. A porosity examination showed that most pores were of the closed or inaccessible

type. Hardness of the graphitized blocks was 93 on the Rockwell "R" Scale. In general then, these products possess a good porous structure, insulating properties, and will support much higher compressive loads than porous carbons made with petroleum coke fillers which have compressive strengths of about 1400-1600 p.s.i. In addition, the pores of the products are mainly of the closed variety in that the free passage of air through the block is highly inhibited. 3,567,808 4 Example II Coconut shells ground to 8 mesh (U.S. sieve series) were carbonized with the exclusion of air in a muffle furnace heated at a rate of 200° C./hr. to 900° C. The carbonized residue was ground to pass a 100 mesh (U.S. sieve series) and then blended intimately with ammonium lignin sulfonate (Orzan A) in a 50-50 weight ratio. The blend was combined at room temperature in a sigma-blade mixer with enough solvent (water, in this case) to form a slurry. The resultant solution-suspension was mixed constantly while the temperature of the mixture was increased steadily to evaporate the solvent. As the solvent was eliminated the mixture became increasingly viscous to the point of actual solidification. Just before solidification occurred, the mixer was discharged and drying was completed by heating in an oven at 110° C. for 12 hours. The dried mixture was broken into nuggets and carbonized with the exclusion of air in a muffle furnace heated at a rate of 200° C./hr. to 900° C. The resulting residue called a "calcine" was ground to 65/200, 65/100 and 35/65 mesh fractions, hereinafter designated Samples A, B and C respectively. Each of these samples was mixed with an appropriate quantity of No. 30 medium 25 coal tar pitch. (Quantities were 30%, 30% and 20% for Samples A, B and C respectively.) Each combination was mixed thoroughly at 140° C., granulated in a jaw crusher to pass a standard 40-mesh screen and molded into 4 1/2 in. x 6 in. rectangular blocks about 3 in. thick on a heated platen molding press using a molding pressure of 3-4 tons/in.². The molded blocks were packed in a carbonized-sand mixture within silicon carbide saggers and baked in a muffle furnace at the following baking schedule: 3° 35 C./hr.-R.T. to 600° C., 66° C./hr.-600° C. to 900° C., with a soak at 900° C. for 1 hr. Selected specimens of the baked blocks were graphitized by further heat treatment to 2750° C. in an induction furnace at a 100° C./hr. heating rate from 900° C. to 2750° C. Specimens were cut from the baked or carbonized blocks (designated Samples AC, BC and CC) and graphitized blocks (designated Samples AG, BG and CG) and characterized according to established testing procedures. The properties of these specimens are summarized in Table I. 45 The pore volume of Sample A, carbonized and graphitized, and the X-ray properties graphitized of Samples A, B and C were determined and are summarized in Table II. The data in Table II clearly shows that two related types of low density-high strength carbon and graphite molded materials have been prepared from economical and readily available materials. Both products, in either the carbon or graphite forms, possess unique properties such as: a high strength-weight ratio; a low thermal conductivity; a C.T.E. of nearly unity in the graphitized state; and a high closed pore volume in both states. Samples AG, BG and CG have essentially all closed pores since the porosity could not be measured by the testing technique employed. 60 The density of the carbonized and graphitized material produced through the process of the present invention is substantially lower than that usually associated with carbon materials of high compressive strength. The apparent density of materials produced through the process are below 1.3 g./cc. while the compressive strength is in excess of 5,000 p.s.i. In order to approach this same compressive strength with conventional carbon or graphite material the density is usually in the range of 1.5 to 1.8 g./cc. 70 The character of the properties demonstrates that these low density materials adequately fulfill the requirements for use in high temperature furnaces for producing ceramics and graphites by hot molding techniques. Many other uses are suggested such as high temperature insulation, refractory brick, radiation shields, as well as any

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